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ARKANSAS 27 OUACHITA

FIELD APPRAISAL ANALYSIS

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Prepared By  
Power Requirements Section  
Electric Operations and Loans Division  
RURAL ELECTRIFICATION ADMINISTRATION

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Field Appraisal  
Completed in  
February 1954

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April 22, 1954

Power Requirements Section  
Electric Operations and Loans Division

872528

SUMMARY AND CONCLUSION  
ARKANSAS 27 OUACHITA

AREA CHARACTERISTICS

The population and number of farms in the service area decreased over the period 1940-1950. The population decrease represents a reversal in trend while the decrease in number of farms follows a trend which began in 1920. The average value of farm land and buildings was \$3,687 per farm in 1950 and gross farm income from sale of farm products averaged \$786 in 1949. The average farm property value in the area was about 60 percent of that for the state as a whole. The average farm income was about three-eighths of the state average. Both increased at slower rates than for the state as a whole over the period 1940-1950. Cotton is the major source of agricultural income in the area. Agriculture accounted for approximately 16 percent of the employed labor force in 1950. The topography of the area ranges from nearly level to rolling. Soils are generally poorly drained and of low productivity. The growing season averages 224 days. No serious weather hazards are reported.

ESTIMATED FUTURE NUMBER OF CONSUMERS

On December 31, 1953, the cooperative had approximately 3,800 consumers. The manager estimated a total of 5,619 would be served by 1963. After a careful consideration of related factors pertaining to the area, an estimate of approximately 4,300 within 10 years is recommended. This allows for some 950 less farm and nonfarm consumers, 80 less town residents and 280 less small commercials than was estimated by the manager for 1963.

ESTIMATED FUTURE AVERAGE CONSUMPTION OF ELECTRICITY

This system was energized in 1940. Since 1941 the average monthly farm consumption increased from 44 kwh to 91 kwh in 1953. Served farm and nonfarm consumers indicated their consumption would increase 24 percent and town residential consumers 17 percent during the next 3 years. Use of gas was reported by 69 percent of the farm and non-farm respondents.

Based on factors believed to be significant, this analysis leads to the following estimates of average kwh consumption which are certified as being reasonable and may be expected to be attained in the years specified:





## 2-Summary

<u>Class of Consumer</u>	Actual 12 Months <u>Ended February, 1954</u>	<u>1956</u>	<u>1959</u>	<u>1964</u>
Farm	94	110	130	165
Nonfarm	100	120	140	175
Town Residential	122	140	160	190
Seasonal (annual)*	469	430	520	575
Small Commercial	356	400	440	500
Public Buildings	53	65	80	100
Oil Wells (54 H.P.) (annual )	10,608	11,000	11,000	11,000
Large Commercial (annual)	Estimated KW Billing Demand			
St. Francis Material Co.	60 kw	100,000	100,000	100,000
Pine Bluff Sand & Gravel Co.	40 kw	35,000	35,000	35,000

\*Billed annually

E. R. Brown, Head  
Power Requirements Section  
Electric Operations and Loans Division



April 22, 1954

Power Requirements Section  
Electric Operations and Loans Division

ANALYSIS OF BASIC FACTORS RELATED TO THE FUTURE  
CONSUMPTION OF ELECTRICITY  
ARKANSAS 27 OUACHITA

This analysis of basic factors related to future consumption of electricity by consumers of Ouachita Rural Electric Cooperative Corporation, with headquarters at Camden, Arkansas is based on a field study conducted by Reuben H. Glazier, Agricultural Economist, during January and February, 1954. This analysis was prepared by Joseph C. Podany, Agricultural Economist. The field work consisted primarily of interviews with 160 served farm and nonfarm residential consumers. In addition, unserved farm and nonfarm families and served and prospective consumers in other classes were interviewed<sup>1/</sup>.

Businessmen, bankers and agricultural leaders, including directors of the cooperative, were consulted regarding local economic trends and their estimates of the future of the area with respect to the use of electricity. Supporting economic data were obtained from the U. S. Census for Calhoun and Ouachita counties and from other secondary sources.

NATURE OF PRESENT AND INDICATED FUTURE  
NUMBER OF CONSUMERS

On December 31, 1953, the cooperative was serving 3,799 consumers of which 378 were classified as town residential, 1,259 farm, 1,635 nonfarm, 525 small commercials, 1 large commercial and 1 public street lighting.

The manager has indicated in a letter dated February 3, 1954 (Figure 1), that he expects to serve 5,619 consumers by 1963.

The number of various classes of consumer units as disclosed by an expansion of the sample data is compared with the manager's estimate in Table I. Sample data were expanded by a reciprocal of the sampling rate.

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<sup>1/</sup> Farm and nonfarm respondents in the survey were randomly selected and comprise an area sample of approximately 5 percent of the consumer units existing in the area. Town residential respondents were randomly selected from a 10 percent list sample of resident users located in the town of Hampton.



TABLE I  
DISTRIBUTION OF CONSUMER UNITS WITH RESPECT  
TO ELECTRIC SERVICE

Class	Number in Random Sample	Expanded Number <sup>a/</sup>	Manager's Estimate	Estimated Number
<u>Served</u>				
Farm	99	1,980	1,259	1,259
Nonfarm	61	1,220	1,635	1,635
Town Residential	24	480	378	378
Small Commercial	6	120	} 525	525
Public Buildings	4	80		
Street Lighting	--	--	.1	1
Large Commercial	--	--	1	1
<u>Potential</u>				
Farm	6	120	990	200 <sup>b/</sup>
Nonfarm	7	140	360	200 <sup>c/</sup>
Town Residential	--	--	130	50
Small Commercial	--	--	340	60
Public Buildings	2	40	--	--
Street Lighting	--	--	--	--
Large Commercial	--	--	--	--
Subtotal	209	4,180	5,619 <sup>d/</sup>	4,309 <sup>e/</sup>
<u>Other</u>				
Idle Services -- Farm and Nonfarm	10	200	--	--
Occupied Disconnected	2	40	--	--
Service Run not Connected	3	60	--	--
Vacant Disconnected	5	100	--	--
Vacant no Service Run	3	60	--	--
Not Interested -- Farm	3	40	--	--
Not Interested -- Nonfarm	13	260	--	--
Total Units	237	4,740	5,619	
Total Estimated Ultimate Consumers of Electricity				4,309

<sup>a/</sup> Derived by expanding sample data by reciprocal of sampling data.

<sup>b/</sup> Includes 120 unserved potentials, 20 occupied disconnects, 30 services run but not connected and 30 not presently interested.

<sup>c/</sup> Includes 140 unserved potentials and 60 presently not interested.

<sup>d/</sup> Estimated number to be receiving service by 1963.

<sup>e/</sup> Estimated number to be receiving service by 1964.





ANALYSIS OF FUTURE NUMBER OF CONSUMERS

The 5,619 consumers the manager expects by 1963 (Figure 1) represent an increase of 1,820 consumers or 48 percent over the number served as of December 31, 1953. Numbers of existing potential consumers indicated by the appraisal (Table I) and trends in population and numbers of farms and numbers of non-urban households do not support this expectation.

The manager has estimated 2,249 farm and 1,995 nonfarm consumers by 1963, or an increase of 1,350 in these two classes, compared with the 400 existing potential consumers indicated by the appraisal. The prospect of a net increase in such consumers resulting from an increase in population is not indicated by past trends.

The appraiser reported that the area has been well covered with electric lines. No major extensions remain to be built that would add large numbers of consumers. Only a limited amount of new construction is taking place and there appear to be no expected new industries or developments that would cause a local boom in new construction.

At the time of the appraisal the area was experiencing a slowing down in business activity. The principal industrial concerns, including a Navy Ordnance Depot, a paper mill, a furniture factory and a pottery plant, were all giving temporary dismissal notices to their employees. Inasmuch as industrial employment is important to both farm and nonfarm residents, the prospect of a continued decline in business activity provides little basis for expecting a net growth in number of such consumers. It is therefore estimated that no more than 400 net additional farm and nonfarm consumers could be expected by 1964.

The appraisal sample was not designed to adequately reflect other classes of consumers and, therefore, cannot be used as an indicator of the number of such consumers existing in the cooperative area.

In his letter (Figure 1) the manager estimated 508 town residential consumers by 1963 or an increase of 130. According to the appraiser the cooperative's classification of town residentials includes the residents of the City of Hampton as well as some farm and nonfarm residents who have Hampton as their mailing address. The appraiser is of the opinion that there is little actual difference between the farm, nonfarm and town residential consumers as shown on the cooperative operating reports, and that a real need for reclassification of such consumers exists. There appears to be some interest on the part of the Hampton City Council in purchasing that portion of the cooperative system serving the City of Hampton. If such a sale should materialize the cooperative would lose a large part of its consumers classified as town residentials. Otherwise, the same economic factors affecting numbers of farm and nonfarm consumers also affect numbers of town residential consumers; it is therefore estimated that no more than 50 net additional town residential consumers will be served by 1964.

The manager's estimate of 865 small commercials by 1963 includes oil wells and other commercial consumers as well as seasonal and public buildings and represents an increase of 340 over the number presently served. The cooperative is presently serving





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16 oil wells and according to the appraiser expects to serve about 40 additional ones over the next 10-year period. Also, at present, the cooperative is serving 105 seasonal cottages and cabins. The appraiser states that practically all land surrounding Mustin Lake where most of such seasonals are located has been subdivided into lots and already built on, and therefore it is not likely that there would be any great increase in number of seasonal consumers during the next 10 years.

The continued trend toward consolidation of schools will probably mean that something less than the present number of 18 will be served by 1964. In view of the apparent slowing down of economic activity, the number of stores, service stations and other small commercial consumers served by the cooperative are not expected to vary much from the present number of 243. Accordingly, it is estimated that no more than 60 net additional consumers in the small commercial class are likely to be added to the present number of 525 reported by the manager in his letter.

#### ANALYSIS OF FUTURE AVERAGE MONTHLY KWH CONSUMPTION

##### Estimated Future Average Residential Consumption of Electricity

The analysis leads to the following estimates of average residential kwh consumption which are believed to be reasonable and may be expected to be attained in the years specified:

	12 Months Ended <u>February, 1954</u>	<u>1956</u>	<u>1959</u>	<u>1964</u>
Farm	94	110	130	165
Nonfarm	100	120	140	175
Town Residential	122	140	160	190

The above estimates are based on the assumption that the existing classification of consumers will be continued by the cooperative and were arrived at after careful consideration of the following factors:

##### Nature of Future Residential Consumption

Table II shows how the estimated kwh consumption for 1956 might be achieved. It is estimated that 94 percent of the increase in average farm and nonfarm and 82 percent of the town residential consumption between 1953 and the end of 1956 will occur as a result of the addition of six major home appliances. The data in Table II were adjusted for appliance usage in the area and for sample variation to reflect probable present and future usage per 100 consumers of all residential consumers.



TABLE II

ESTIMATED KWH USAGE, ALL RESIDENTIAL CONSUMERS  
BY CHARACTER OF LOAD PER 100 CONSUMERS, 1956

Use	Indicated Future		Increase		Estimated KWH <sup>a/</sup>		Future Total	
	Saturation				Present			
	Farm and	: Farm and	: Farm and	: Farm and	: Farm and	: Farm and	: Farm and	: Farm and
	Nonfarm	Town:	Nonfarm	Town:	Nonfarm	Town:	Nonfarm	Town
Major								
Household Use								
Home Freezers	25	25	8,712	15,912	11,038	7,483	19,800	23,400
Water Heaters	5	5	5,280	--	7,920	12,480	13,200	12,480
Telev. Receivers	15	25	4,113	4,493	634	4,867	4,752	9,360
Water System	54	0	3,379	--	9,504	--	12,833	--
Range	6	12	2,112	--	4,224	14,976	6,336	14,976
Refrigeration	94	100	1,901	--	23,195	40,435	30,096	40,435
Miscellaneous	--	--	1,615	4,356	52,723	63,329	54,333	67,685
Total - Annual Usage								
Per 100 Consumers			27,117	24,761	114,288	143,575	141,405	168,336
Estimated increase (total) annual usage per consumer								
Farm and nonfarm			271	--			1,414	--
Town residential			--	248			--	1,683
Estimated increase (total) monthly usage per consumer								
Farm and nonfarm			23	--			118	--
Town residential			--	20			--	140

a/ Adjusted to take into account that appliance usage and amount of electricity required is only 93 percent of average for United States as determined by REA for farm and nonfarm consumers and 109 percent of such average for town residential consumers. Average consumption of respondents was 105 percent of average for all farm and nonfarm consumers and 106 percent of average for all town residential consumers.

#### Consumption Trends

This system was energized in 1940. Since 1941 average monthly farm consumption has increased from 44 kwh to 91 kwh in 1953. This is an increase of about 4 kwh in average monthly usage for each year. Since 1950 the average monthly increase in

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usage has been about 10 kwh each year for all farm and nonfarm consumers and about 12 kwh for town residential consumers. Between 1950 and 1953, farm consumption increased from 61 kwh to 91 kwh, nonfarm residential consumption increased from 70 kwh to 98 kwh and town residential consumption from 84 kwh to 121 kwh.

Historical consumption records for the appraisal sample of farm and nonfarm residential consumers reflect a similar generally rising average consumption. The increases in average consumption for all respondents have been more moderate than for individual age groups. Initial averages for new groups of consumers have varied considerably since 1946. Consumption averages for farm and nonfarm consumers in the survey are shown in Table III.

TABLE III  
AVERAGE MONTHLY CONSUMPTION OF 147 FARM AND NONFARM  
RESIDENTIAL CONSUMERS

<u>Years of Service</u>	<u>Number in Group</u>	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>
8 or more	19	59	71	83	101	116	124	139	156
7	27	--	49	51	62	72	98	117	120
6	18	--	--	31	43	55	95	113	107
5	14	--	--	--	46	48	60	73	90
4	17	--	--	--	--	45	58	58	83
3	20	--	--	--	--	--	56	69	87
2	21	--	--	--	--	--	--	53	69
1	11	--	--	--	--	--	--	--	62
Weighted Average		59	58	56	64	69	84	91	100

Historical records for town residential consumers in the survey also indicated a generally rising average consumption. Most of the town residentials contacted were connected in 1948 and 1949. The average consumption of town residentials sampled rose from 75 kwh in 1948 to 128 kwh in 1953.

A projection of the historical trends suggests that the average monthly usage by the end of 1956 will be between 103 and 121 kwh for farm consumers, between 110 and 128 kwh for nonfarm consumers and between 135 and 157 kwh for town residential consumers. These figures do not take into consideration anything more than historical trends and the effects of past and future consumer additions.





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Indicated Consumption

The sample group of served farm and nonfarm consumers indicated a 24-percent increase in average kwh usage within 3 years. Including potential farm and nonfarm consumers, the indicated increase in average kwh was 21 percent or to an indicated future usage of 129 kwh. Served town residential consumers indicated a 17-percent increase in average kwh usage within 3 years.

TABLE IV

INDICATED MONTHLY KWH CONSUMPTION<sup>a/</sup>

Consumer Class	Present	Future <sup>b/</sup>	Percent Increase
Farm and Nonfarm Residential	107	133	24
Town Residential	117	137	17

a/ Based on indications of served respondents in the survey and average energy requirements as determined by REA for the country at large.

b/ Based on what respondents expect to add in 3 years.

Since the sample group of farm and nonfarm consumers were actually averaging 100 kwh and town residents were averaging 128 kwh in 1952, it appears that farm and non-farm residential consumers in this area use only 93 percent of the average usage of appliances as determined by REA for the country at large; town residential consumers are using 109 percent of this average.

Applying the indicated increases in Table IV to present consumption averages, the average monthly consumption in 3 years would be (1) 113 kwh for presently served farm consumers and 110 kwh for farm consumers with potentials included; (2) 122 kwh for presently served nonfarm consumers and 119 kwh for nonfarm consumers with the addition of potentials; (3) 142 kwh for served town residents.

A consideration of the survey results, along with the effects of past and future consumer additions and consumption trends, indicates that monthly consumption by the end of 1956 will be within the ranges indicated by historical trends. These limits remain 103 and 121 kwh for farm consumers, 110 and 128 kwh for nonfarm consumers and 135 and 157 kwh for town consumers.

Other factors considered in arriving at the future estimates of electric consumption are: (1) the extent gas usage is likely to continue in the area; (2) the effect of





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electric rates; (3) the extent to which a power use promotion program is developed and is likely to overcome consumer attitudes and economic factors limiting consumption; and (4) economic trends.

#### Gas Competition

LP gas is used by 69 percent of the served farm and nonfarm respondents. An additional 3 percent of the respondents plan to use LP gas in the future. The present uses are shown in Table V.

TABLE V  
STATUS OF GAS USE, 155 FARM AND NONFARM  
RESIDENTIAL CONSUMERS<sup>a/</sup>

<u>Consumers' Position with</u> <u>Respect to Use of Gas</u>	<u>Number in</u> <u>Survey</u>	<u>Percent</u> <u>of Total</u>
Not Using and Not Planning to Use	44	28.4
Not Using but Planning to Use	4	2.6
Presently Using	107	69.0
Cooking	100	
House Heating	100	
Water Heating	48	
Refrigeration	8	
Total	155	100.0

<sup>a/</sup> All served farm and nonfarm respondents indicating status with respect to use of gas.

#### Rates

The cooperative's present domestic farm and home retail rate schedule is as follows:

First 25 kwh per month @ 9.0¢ per kwh  
Next 25 kwh per month @ 5.0¢ per kwh  
Next 50 kwh per month @ 3.0¢ per kwh  
Next 100 kwh per month @ 2.0¢ per kwh  
Over 200 kwh per month @ 1.5¢ per kwh



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Table VI shows that 92 percent of the farm and nonfarm consumers in the survey indicate they were using electricity at a monthly rate of 200 or less kwh. The remaining 8 percent indicated that they were now using 200 or more kwh per month. Thirteen percent of the respondents indicated that they intended to use more than 200 kwh by the end of 1956. These figures are based on indicated rather than on actual usage.

TABLE VI  
DISTRIBUTION OF CONSUMERS AT INDICATED  
PRESENT AND FUTURE USAGE<sup>a/</sup>

Average Monthly Consumption	Percent of All Consumers at Present Indicated Usage	Percent of All Consumers After Increases Have Taken Place (end of 3-yr. period)
Under 40 kwh	7.5	3.8
40 - 80 kwh	48.8	37.5
81 - 120 kwh	21.2	26.2
121 - 200 kwh	14.4	19.4
201 - 400 kwh	5.0	6.9
401 - 600 kwh	2.5	5.0
601 kwh and over	0.6	1.2

<sup>a/</sup> Based on indicated usage of all served farm and nonfarm consumers in the survey.

#### Power Consumption Program

According to the appraiser, the cooperative held two range sales campaigns during the past year. About 35 new electric ranges were added to the cooperative load under a program which included free installation. The cooperative's home electrification advisor reported that dealer participation on sale of ranges was very poor even in cases where consumers were definitely interested in purchasing ranges. Cases were also reported where the consumer originally wanted an electric range but through dealer persuasion purchased a gas range instead. Most of the dealers in the area sell both gas and electric ranges but claim they make a much greater profit from gas ranges (though only a few of them also sold LP gas) and have far less servicing to do.

The cooperative's home electrification advisor is reportedly now planning home freezer demonstrations throughout the cooperative area. There appears to be a greater interest on the part of consumers and dealers in home freezers than in electric ranges.



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There appears to be a need for consumer education regarding cooperative costs of electricity and LP gas. Many consumers have the notion that addition of an electric range means \$10.00 per month more to the electric bill. LP gas sells for 13 to 16 cents a gallon so electric rates under present schedule are very competitive.

### ECONOMIC CHARACTERISTICS

The service area is located in the south central part of Arkansas and covers most of Ouachita and Calhoun counties and small portions of Bradley, Dallas and Nevada counties.

The total population in this area increased over the period 1920-1940 and decreased over the period 1940-1950. On the other hand, the number of farms in the area has been decreasing since 1920. The population decrease between 1940-1950 was a result of a 38-percent decrease in farm population. This was accompanied by a 6-percent decrease in numbers of farms. Nonfarm population increased 3 percent while urban population increased 63 percent over the 1940-1950 period.

In 1950 the farm population comprised 27 percent of the total, rural nonfarm 37 percent, and urban 36 percent. Agriculture accounted for approximately 16 percent of the employed labor force in 1950. Manufacturing, mainly lumber products accounted for 32 percent of the employed labor force, wholesaling and retailing 15 percent, construction 6 percent, and miscellaneous trade, services and professions the remainder.

Farms in the area averaged 83 acres in 1950. They were valued at \$3,687 per farm or 61 percent of the average state valuation per farm. Average income for all farms in 1949 was \$786 or 36 percent of average income per farm for the state as a whole.

About two-thirds of the agricultural income in the area is accounted for by field crops, principally cotton. Next in importance are cattle and hogs, together accounting for about one-fifth of the total farm income. Dairying accounts for 4 percent and poultry for 3 percent of the farm income. Off-farm employment for 100 days or more in 1949 was reported by 33 percent of the farmers. Full or part ownership of farms was reported by about 80 percent of the operators.

Available data indicate a ratio of loans to deposits of 1 to 4.5 in 1953 for banks serving the rural areas. The rural banks have been quite active in making loans to farmers. The main source of credit for farmers getting started in dairying has been the Farmers Home Administration. No Production Credit or Farm Loan Associations have their headquarters in the area and those nearby are not very active in the area.

Farm facilities data for 1950 indicate that 63 percent of the farms had central station electricity and 16 percent had telephones. It is the opinion of the appraiser that now electric service could be extended at reasonable cost to practically all of





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the farms in the service area. U. S. Highways 79 and 167 and State Highways Nos. 4, 7, 8, 9, 12 and 24 provide an adequate framework for road transportation. The farm-to-market roads need much improvement but the majority are passable throughout the year. The Rock Island Railroad serves the area.

The principal natural resources of the area are lumber and oil. The oil fields have been recently developed.

TABLE VII  
ECONOMIC TRENDS RELATED TO THE RATE OF  
INCREASE IN USE OF ELECTRIC POWER

Item and Relationship	Trends				
	<u>Basic Economic Trends</u>				
<u>Population</u>	<u>1920</u>	<u>1930</u>	<u>1940</u>		<u>1950</u>
Service Area	32,443	39,642	40,737		40,183
State of Arkansas	1,752,204	1,854,432	1,949,387		1,909,511
Ratio Area to State	.018	.021	.021		.021
<u>Number of Farms</u>	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1945</u>	<u>1950</u>
Service Area	4,010	3,819	3,094	2,916	2,734
State of Arkansas	232,604	242,334	216,674	198,769	182,429
Ratio Area to State	.017	.016	.014	.015	.015
<u>Average Income from All Farm Products Sold</u>			<u>1939</u>	<u>1944</u>	<u>1949</u>
Service Area			\$313	\$448	\$786
State of Arkansas			\$744	\$1,352	\$2,153
Ratio Area to State			.42	.33	.36
<u>Average Value of Farm Land and Buildings</u>		<u>1930</u>	<u>1940</u>	<u>1945</u>	<u>1950</u>
Service Area		\$1,896	\$1,504	\$2,143	\$3,687
State of Arkansas		\$2,261	\$2,108	\$3,334	\$6,062
Ratio Area to State		.34	.71	.64	.61
		<u>Power Cost and Power Use Trends</u>			
<u>Cost of Purchased Power</u>	<u>1942</u>	<u>1945</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
Arkansas 27 Ouachita	.92¢	.63¢	.55¢	.55¢	.53¢
Neighboring Co-op.	.92¢	.70¢	.57¢	.56¢	.54¢
<u>Average Monthly KWH Consumption Per Farm Consumer</u>	<u>1942</u>	<u>1945</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
Arkansas 27 Ouachita	38	62	84	93	105
Neighboring Co-op.	23	35	56	62	70





PHYSICAL CHARACTERISTICS

The cooperative area lies entirely within the coastal plains region. The topography of the area ranges from nearly level to rolling. The soil productivity varies from low to moderate with the greater portion of the soils being of low productivity. Due to inadequate internal drainage, bottom lands are generally less productive than uplands. Soil erosion is a major problem on practically all sloping lands.

The average length of growing season is 224 days at Camden. Average temperatures are approximately 45°F for January and 81°F for July. Average annual precipitation is 49 inches at Camden. General data and reports of local leaders indicate few climatic hazards to farming.

APPENDIX TABLE I

PRESENT AND INDICATED SATURATION OF ELECTRICAL  
APPLIANCES AND EQUIPMENT AND CORRESPONDING  
INDICATED INCREASE IN KWH USAGE FARM AND  
NONFARM RESIDENTIAL CONSUMERS, COMBINED

Appliance or Equipment	Percent of Consumers <sup>a/</sup>		Increase <sup>b/</sup>	
	Presently Using	Indicating Future Use	Percentage Points	KWH Usage Per 100 Consumers
Air Compressor	1	3	2	70
Battery Charger	1	1	---	---
Blanket	2	2	---	---
Broiler	4	4	---	---
Brooder (Battery)	1	1	---	---
" (Infra-Red)	1	1	---	---
" (Hover)	3	9	1	106
Churn	15	16	1	3
Clock	26	26	---	---
Dishwasher	1	2	1	30
Drill Press	2	3	1	12
Fan (Exhaust)	1	1	---	---
" (Household)	56	58	2	30
Fence	1	2	1	50
Food Mixer	19	20	1	25
Forge	---	1	1	12
Freezer (Home)	14	25	11	9,900
Garden Watering	1	1	---	---
Headbolt Heater	1	1	---	---
Heating Pad	6	6	---	---
Hot Plate	13	14	1	70
Iron	95	95	---	---



2-Appendix Table I  
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Appliance or Equipment	Percent of Consumers <sup>a/</sup>		Increase <sup>b/</sup>	
	Presently Using	Indicating Future Use	Percentage Points	KWH Usage Per 100 Consumers
Lathe	1	4	3	36
Lighting:				
Bunk House	1	1	---	---
Cave or Spring House	1	1	---	---
Dairy Barn	1	1	---	---
Garage	5	6	1	8
General Barn	7	10	3	72
House Lighting	100	100	---	---
Milk House	1	1	---	---
Other Buildings	16	17	1	12
Poultry Brooder House	3	5	2	10
Poultry Laying House	5	7	2	70
Shop	3	4	1	12
Yard	6	7	1	18
Milk Cooler	1	1	---	---
Milking Machine	1	1	---	---
Percolator	9	9	---	---
Poultry Feeder	---	1	1	240
Power Saw	4	6	2	24
Pressure System(Less than 22')	20	36	16	2,830
"      "      (Greater than 22')	14	18	4	960
Radio	91	92	1	100
Range	4	6	2	2,400
Refrigerator	83	94	6	2,160
Refrigerator (Walk-in)	1	1	---	---
Roaster	2	2	---	---
Sewing Machine	14	16	2	20
Soldering Iron	1	3	2	30
Space Heater (Portable)	6	6	---	---
Television Receiver	2	15	13	4,630
Toaster	18	18	---	---
Tool Grinder	3	5	2	50
Vacuum Cleaner	26	28	2	40
Ventilator (Attic)	2	2	---	---
"      (Window)	6	8	2	100
Waffle Iron	11	11	---	---
Washing Machine	67	77	10	350
Water Heater with Bath	3	5	2	6,000
Water Heater (Pour-in)	1	1	---	---
Water Heater (Pressure Type)	1	1	---	---
Water Warmer	---	1	1	60
Welder	---	2	2	150

a/ Based on indications of presently connected consumers.

b/ Based on average energy requirements determined by REA. Data do not reflect instances where more than one of the same appliance exists per consumer. These cases are rare and do not affect the over-all pattern materially.





